

REMARKS

By this amendment, claims 1 and 8 have been amended. Claims 11 and 12 were previously canceled. Claims 1-10 and 13 remain in the application. Support for the amendments can be found the specification and drawings. No new matter has been added. This application has been carefully considered in connection with the Examiner's Action. Reconsideration, withdrawal of the final action, and allowance of the application, as amended, is requested.

Rejection under 35 U.S.C. §103

Claim 1 recites a method for classifying at least one audio signal into at least one audio class, the method comprising the steps of:

analyzing said audio signal to extract at least one predetermined audio feature;

performing a frequency analysis on a set of values of said extracted predetermined audio feature at different time instances resulting in a power spectrum of said extracted predetermined audio feature;

deriving at least one further audio feature representing a temporal behavior of said extracted predetermined audio feature by parameterizing said power spectrum, wherein parameterizing said power spectrum comprises (a) summarizing a frequency axis of the power spectrum by summing energy within at least one predetermined frequency band and (b) dividing (b)(i) the summed energy within the at least one predetermined frequency band by (b)(ii) an average of subsequent values of said extracted predetermined audio feature to (c) yield a relative modulation depth representing an amount of envelope modulation in the at least one predetermined frequency band; and

classifying said audio signal based on said further audio feature.

Support for the amendments to claim 1 (as well as for claim 8) can be found in the specification at least on page 3, lines 26-34.

As presented herein, claim 1 now more clearly articulates the novel and non-obvious distinct features thereof, as discussed below. Claim 1 is directed to a method for classifying at least one audio signal into at least one audio class. The at least one audio signal is analyzed to extract at least one predetermined audio feature. A frequency analysis is performed on a set of values of said extracted predetermined audio feature at different time instances to provide a power spectrum of the extracted predetermined audio feature. At least one further audio feature (*corresponding to an uncorrelated further audio feature (see the specification at page 3, lines 6-7, page 4, line 11)* representing a temporal behavior (*more particularly, one of a temporal fluctuation velocity or a detailed description of a temporal behavior (see the specification at page 2, lines 15-16, 19, 22-23 and 26-27)* of the extracted predetermined audio feature is derived by parameterizing the power spectrum. Parameterizing the power spectrum comprises **(a)** summarizing a frequency axis of the power spectrum by summing energy within at least one predetermined frequency band and **(b)** dividing **(b)(i)** the summed energy within the (*respective*) at least one predetermined frequency band by **(b)(ii)** an average of subsequent values of said extracted predetermined audio feature to **(c)** yield a relative modulation depth *representing an amount of envelope modulation* in the at least one predetermined frequency band (*see the specification at page 3, lines 26-34*). The method further includes classifying the audio signal based on said further audio feature. The method of claim 1 advantageously provides further audio features that *(i)* include information about the temporal fluctuation velocity of the audio feature, *(ii)* are uncorrelated, and *(iii)* give a detailed description of the temporal behavior of an audio feature (*see the specification at page 2, lines 15-16, 19, 22-23 and 26-27*).

Claims 1-3, 5, 7-10, and 13 were rejected under 35 U.S.C. §103(a) as being unpatentable over Rui et al. (US 7,028,325, hereinafter referred to as “Rui”) in view of

O'Hagan et al. (US 5,581,658, hereinafter referred to as "**O'Hagen**"), in further view of Gray et al. ("Design of Moving Average Trend Filters using Fidelity, Smoothness and Minimum Revisions Criteria", Statistical Research Report Series No. RR96/01, Institute of Statistics and Operations Research, Victoria University of Wellington, New Zealand, 1997, hereinafter referred to as "**Gray**"). With respect to claim 1, Applicant respectfully traverses this rejection on the grounds that these references are defective in establishing a *prima facie* case of obviousness.

As the PTO recognizes in MPEP § 2142:

*... The examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness. If the examiner does not produce a *prima facie* case, the applicant is under no obligation to submit evidence of nonobviousness ...*

It is submitted that, in the present case, the examiner has not factually supported a *prima facie* case of obviousness for at least the following reasons.

1. Even When Combined, the References Do Not Teach the Claimed Subject Matter

The **Rui**, **O'Hagen**, and **Gray** references cannot be applied to reject claim 1 under 35 U.S.C. § 103 which provides that:

A patent may not be obtained ... if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains ... (Emphasis added)

Thus, when evaluating a claim for determining obviousness, all limitations of the claim must be evaluated. However, since neither **Rui**, **O'Hagen**, nor **Gray** teaches "wherein parameterizing said power spectrum comprises (a) summarizing a frequency axis of the power spectrum by summing energy within at least one predetermined frequency band and (b) dividing (b)(i) the summed energy within the [respective] at least

one predetermined frequency band by (b)(ii) an *average of subsequent values* of said *extracted* predetermined *audio feature* to **(c)** yield a relative modulation depth *representing an amount of envelope modulation* in the at least one predetermined frequency band" (emphasis added) as is claimed in claim 1, it is impossible to render the subject matter of claim 1 as a whole obvious, and the explicit terms of the statute cannot be met.

Thus, for this reason, the examiner's burden of factually supporting a *prima facie* case of obviousness has clearly not been met, and the rejection under 35 U.S.C. §103 should be withdrawn.

2. The Combination of References is Improper

Assuming, arguendo, that the above argument for non-obviousness does not apply (which is clearly not the case based on the above), there is still another compelling reason why the **Rui, O'Hagen** and **Gray** references cannot be applied to reject claim 1 under 35 U.S.C. §103.

§ 2142 of the MPEP also provides:

...the examiner must step backward in time and into the shoes worn by the hypothetical 'person of ordinary skill in the art' when the invention was unknown and just before it was made.....The examiner must put aside knowledge of the applicant's disclosure, refrain from using hindsight, and consider the subject matter claimed 'as a whole'.

Here, neither **Rui, O'Hagen**, nor **Gray** teaches, or even suggests, the desirability of the combination since no one of the references teach the specific parameterizing a power spectrum that "comprises **(a)** summarizing a frequency axis of the power spectrum by summing energy within at least one predetermined frequency band and **(b)** dividing **(b)(i)** the *summed energy* within the at least one predetermined frequency band by **(b)(ii)** an *average of subsequent values* of said *extracted* predetermined *audio*

feature to (c) yield a relative modulation depth representing an amount of envelope modulation in the at least one predetermined frequency band" (emphasis added) as specified above and as claimed in claim 1.

Thus, it is clear that none of the references provides any incentive or motivation supporting the desirability of the combination. Therefore, there is simply no basis in the art for combining the references to support a 35 U.S.C. §103 rejection.

In this context, the MPEP further provides at § 2143.01:

The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination.

In the above context, the courts have repeatedly held that obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching, suggestion or incentive supporting the combination.

In the present case it is clear that the combination presented in the Office Action arises solely from hindsight based on the invention without any showing, suggestion, incentive or motivation in either reference for the combination as applied to claim 1. Therefore, for this reason, the examiner's burden of factually supporting a *prima facie* case of obviousness has clearly not been met, and the rejection under 35 U.S.C. §103 should be withdrawn.

Accordingly, claim 1 is allowable and an early formal notice thereof is requested. Claims 2-3, 7 and 13 depend from and further limit independent claim 1 and therefore are allowable as well. The 35 U.S.C. § 103(a) rejection thereof has now been overcome.

With respect to claim 8, the same has been amended herein in a similar manner as with respect to the amendment to claim 1. Claim 8 is believed allowable over the **Rui, O'Hagen and Gray** references for the reasons stated herein above with respect to overcoming the rejection of claim 1. Accordingly, claim 8 is allowable and an early

formal notice thereof is requested. Claims 9 and 10 depend from and further limit independent claim 8 and therefore is allowable as well. The 35 U.S.C. §103(a) rejection thereof has now been overcome.

Claim 4 stands rejected under 35 U.S.C. §103(a) as being unpatentable over **Rui** et al. (US 7,028,325) in view of **O'Hagan** et al. (US 5,581,658), in further view of **Gray** et al. ("Design of Moving Average Trend Filters using Fidelity, Smoothness and Minimum Revisions Criteria", Statistical Research Report Series No. RR96/01, Institute of Statistics and Operations Research, Victoria University of Wellington, New Zealand, 1997), in further view of **Blum** et al. (US 5,918,223). Applicant respectfully traverses this rejection for at least the following reasons. Claim 4 depends from and further limits allowable independent claim 1 and therefore is allowable as well. The 35 U.S.C. §103(a) rejection thereof has now been overcome.

Claim 6 stands rejected under 35 U.S.C. §103(a) as being unpatentable over **Rui** et al. (US 7,028,325) in view of **O'Hagan** et al. (US 5,581,658), in further view of **Gray** et al. ("Design of Moving Average Trend Filters using Fidelity, Smoothness and Minimum Revisions Criteria", Statistical Research Report Series No. RR96/01, Institute of Statistics and Operations Research, Victoria University of Wellington, New Zealand, 1997), in further view of **Scheirer** et al. (US 6,570,991). Applicant respectfully traverses this rejection for at least the following reasons. Claim 6 depends from and further limits claim 5, which depends from allowable independent claim 1 and therefore is allowable as well. The 35 U.S.C. §103(a) rejection thereof has now been overcome.

Conclusion

Except as indicated herein, the claims were not amended in order to address issues of patentability and Applicants respectfully reserve all rights they may have under the Doctrine of Equivalents. Applicants furthermore reserve their right to reintroduce

subject matter deleted herein at a later time during the prosecution of this application or a continuation application.

It is clear from all of the foregoing that independent claims 1 and 8 are in condition for allowance. Claims 2-7 and 13 depend from and further limit independent claim 1 and therefore are allowable as well. Claims 9 and 10 depend from and further limit independent claim 8 and therefore are allowable as well.

The amendments herein are fully supported by the original specification and drawings; therefore, no new matter is introduced. An early formal notice of allowance of claims 1-10 and 13 is requested.

Respectfully submitted,

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